

1. A method for providing a hyper-dense, wave-division-multiplexed (HDWDM) photonic signal, the method comprising:

providing first and second photonic carriers;

providing first and second information having respective first and second information bandwidths corresponding thereto;

modulating the first photonic carrier to embody the first information therein at a first photonic bandwidth less than the first information bandwidth; and

modulating the second photonic carrier to embody the second information therein at a second photonic bandwidth less than the second information bandwidth.

2. The method of claim 1, wherein the first and second information bandwidths fit within a combined information bandwidth, the first and second photonic bandwidths fit within a combined photonic bandwidth, and the combined photonic bandwidth is less than the combined information bandwidth.

3. The method of claim 1, further comprising collocating the first and second carriers within a combined photonic bandwidth less than a combined information bandwidth comprising the first and second information bandwidth.

4. The method of claim 1, further comprising launching the HDWDM signal into a transmission path.

5. The method of claim 1 further comprising receiving the HDWDM signal at a destination.

6. The method of claim 5, wherein the destination is remote from a source providing the HDWDM signal.

7. The method of claim 1, further comprising:
selecting first and second transmission paths distinct from one another; and
separating the first and second photonic carriers to produce first and second separated photonic signals traveling along the first and second paths, respectively.

8. The method of claim 7, further comprising:
providing third information having a third information bandwidth;
providing a third photonic carrier;
modulating the third photonic carrier to embody the third information therein at a third photonic bandwidth, less than the third information bandwidth.

9. The method of claim 8, further comprising;
combining the first separated photonic signal and the third photonic carrier into a wave-division-multiplexed signal.

10. The method of claim 9, wherein combining the first separated photonic signal and the third photonic carrier further comprises collocating the first separated photonic signal and the third photonic carrier to so as to render the wave-division-multiplexed signal a hyper-dense, wave-division-multiplexed signal.

5

11. The method of claim 10, wherein the second separated photonic signal and the third photonic carrier have substantially the same frequency, thereby providing a drop/add function by replacing the second separated photonic signal with the third photonic carrier.

12. The method of claim 11, further comprising routing the first, second, and third photonic carriers to distinct, respective, destinations in accordance with the respective carrier frequencies thereof.

13. A method for providing a hyper-dense, wave-division-multiplexed (HDWDM) photonic signal, the method comprising:

providing first and second photonic carriers;

providing a combined information bandwidth comprising first and second information bandwidths having first and second information corresponding thereto, respectively;

modulating the first photonic carrier to embody the first information therein at a first photonic bandwidth less than the first information bandwidth; and

modulating the second photonic carrier to embody the second information therein at a second photonic bandwidth less than the second information bandwidth, the first and second

photonic bandwidths fitting within a combined photonic bandwidth less than the combined information bandwidth.

14. The method of claim 13, further comprising collocating the first and second carriers
5 within the combined photonic bandwidth.

15. The method of claim 14, wherein the combined photonic bandwidth is less than the combined information bandwidth.

16. The method of claim 15, further comprising launching the HDWDM signal into a
10 transmission path.

17. The method of claim 1 further comprising receiving the HDWDM signal at a destination.

18. The method of claim 17, wherein the destination is remote from a source providing
15 the HDWDM signal.

19. The method of claim 18, further comprising:
20 selecting first and second transmission paths distinct from one another; and
separating the first and second photonic carriers to produce first and second separated
photonic signals traveling along the first and second paths, respectively.

20. The method of claim 19, further comprising:

providing third information having a third information bandwidth;

providing a third photonic carrier;

modulating the third photonic carrier to embody the third information therein at a third

5 photonic bandwidth, less than the third information bandwidth.